

Work Order ID 147259

147259

Page 1

Wednesday, June 08, 2016 2:23:53 PM

Item ID: D5311-041 Accept *N900040100* Setup Start *NS1*

Revision ID: Stop *NS2*

Item Name: Engine Cowl Swivel Prop Rod Assembly

Start Date: 6/14/2016 Start Qty: 6.00 *6* Cust Item ID:

Required Date: 6/14/2016 Req'd Qty: 6.00 *6* Customer:

Reference:

Approvals: Process Plan: MCS Date: JUN 09 2016 Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D5311	B

110 Weld per dwg A/R S.S. rod Batch: 17123822 0.00

110

Large Fab

Large Fab

Memo

0.00

1- WELD SWIVEL JOINTS TO PROP ROD AS PER
DWG
DO NOT GRIND WELDS

2- INSTALL TWO DOWEL PINS AS PER DWG AND WELD

3- REMOVE WELDING MARKS AS PER NOTE 10

120

QC8- Inspect parts - second check

0.00

120

QC

Quality Control

QC9

PD

Memo

0.00

5 1 2/8-7-20

5 16-07-20 AS

PTO

DQA:

Date: 16.08.04



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: 16-08-08

Work Order update only ☐

Work Order: <u>147259</u> Part No. <u>D5311-041</u> NCR No. <u>16-5954</u>		DISPOSITION Rework ☐ Scrap ☒ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☒</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☒	Composite ☐	Supplier ☐																																															
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Page 2

Item ID: D5311-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Engine Cowl Swivel Prop Rod Assembly

Start Date: 6/14/2016 Start Qty: 6.00

6

Cust Item ID:

Required Date: 6/14/2016 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130

QC5- Inspect part completeness to step on W/O

0.00

130

QC

Memo

0.00

Quality Control

5

16-07-20

PD

140

0.00

140

Small Fab

Memo

0.00

Small Fab

INSTALL HEATSHRINK AS PER DWG

INSTALL HARDWARE AS PER DWG

5

FF

JUL 20 2016

150

QC5- Inspect part completeness to step on W/O

0.00

150

QC

Memo

0.00

Quality Control

(5)

DAS
38

JUL 22 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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OTHER :																									

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Page 3

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 6/14/2016 **Start Qty:** 6.00 ***6***

Cust Item ID:

Required Date: 6/14/2016 **Req'd Qty:** 6.00 ***6***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

**Insp.
Stamp**

Identify as per dwg & Stock Location: JT369 0.00

160

Packaging

Memo

0.00

Packaging

170

QC21- Final Inspection - Work Order Release

0.00

170

QC

Memo

0.00

Quality Control

DAS
21
9-89

~~JUL 25 2015~~

DAS
21
9-89 JUL 25 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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Picklist Print

Wednesday, June 08, 2016 2:23:57 PM

Page 1

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147259

Parent Item: D5311-041

D5311-041

Parent Item Name: Engine Cowl Swivel Prop Rod Assembly

Start Date: 6/14/2016

Required Date: 6/14/2016

Start Qty: 6.00

Required Qty: 6.00

Comments: IIN REV:A 16.02.10 NEW ISSUE DD VERF:JLM IIN
REV:B 16.04.20 ASPER REV.A DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3158-030 *D3158-030* Heat Shrink		Manufactured	No				Each	1.0000		6			
									**	5/147541			DAS 6 9-89
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST019				1					
					141737			1					
D3622-15 *D3622-15* Ball Stud		Manufactured	No				Each	12.0000		6			
									**	5/146911			DAS 6 9-89
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST046				12					
					146225			12					
D5311-1 *D5311-1* Swivel Joint, Inner		Manufactured	No				Each	12.0000		6			
									**	EL 16-7-19			
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				ST163				12					
					141731			2					
					146227			10					
D5311-3 *D5311-3* Swivel Joint, Outer		Manufactured	No				Each	0.0000		6			
									**	EL 16-7-19			
D5311-5 *D5311-5* Prop Rod		Manufactured	No				Each	0.0000		6			
									**	EL 16-7-19			

147994
149046x6

JUL 20 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By																																																									
								Lead hand / Supervisor Approval Verification																																																									
								QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Picklist Print

Wednesday, June 08, 2016 2:23:57 PM

Page 2

Work Order ID: 147259

147259

Parent Item: D5311-041

D5311-041

Parent Item Name: Engine Cowl Swivel Prop Rod Assembly

Start Date: 6/14/2016

Required Date: 6/14/2016

Start Qty: 6.00

Required Qty: 6.00

D5311-7 Manufactured No

Each 0.0000 6

D5311-7

Prop Rod

D5317-1

Manufactured No

Each 58.0000 12

D5317-1

Dowel Pin

Location

Loc Qty

Loc Code

ST162

58

141736

8

146231

50

LN9016-06K

Purchased No

Each 41.0000 6

I N9016-06K

Washer

Location

Loc Qty

Loc Code

ST563

41

m134727

41

LN9161-06M

Purchased No

Each 40.0000 6

I N9161-06M

Nut

Location

Loc Qty

Loc Code

ST564

40

m134727

40

147357x 6

**

12 16-7-19

**

12 16-7-19

12

**

DAS
8-89

15

**

DAS
8-89

15

JUL 20 2016

DQA: _____ Date: _____

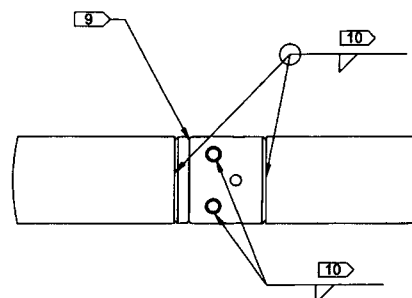
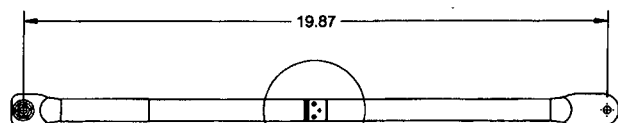
**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

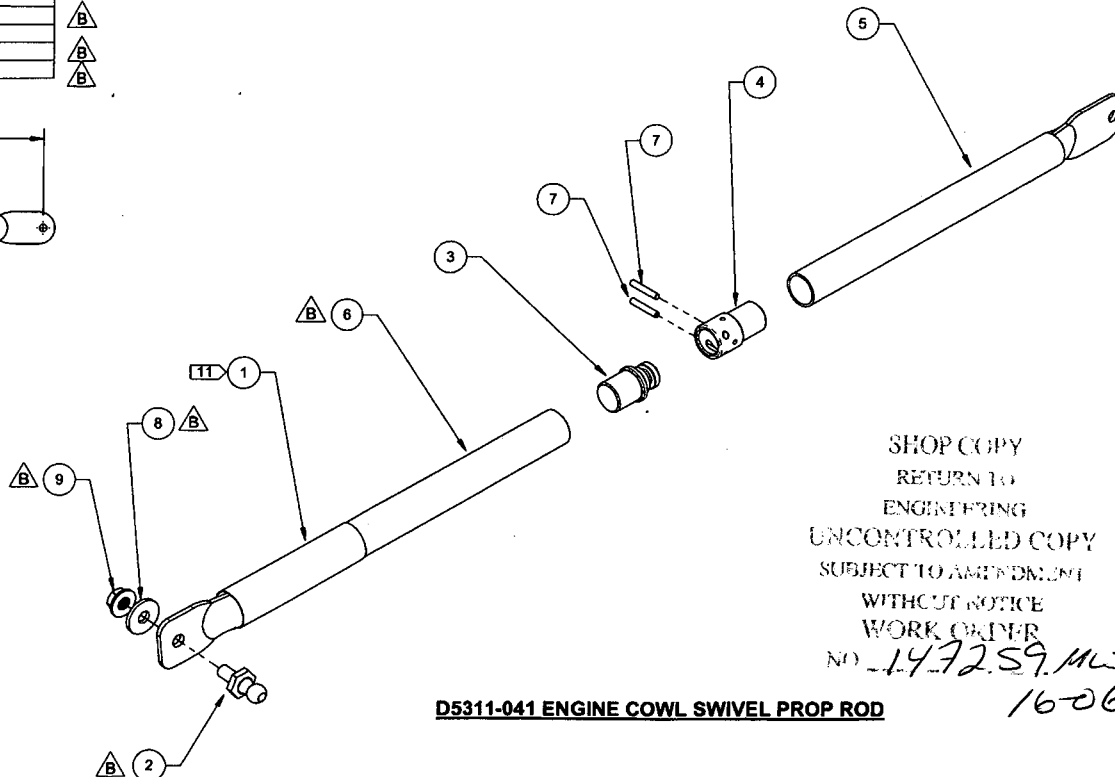
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER :							

ITEM	QTY	P/N	DESCRIPTION
	X	D5311-041	ENGINE COWL SWIVEL PROP ROD ASSEMBLY
1	1	D3158-030	HEAT SHRINK TUBING
2	1	D3622-15	BALL STUD
3	1	D5311-1	SWIVEL JOINT
4	1	D5311-3	SWIVEL JOINT
5	1	D5311-5	PROP ROD
6	1	D5311-7	PROP ROD
7	2	D5317-1	DOWEL PIN
8	1	LN9016-08K	WASHER (ALT: LN9016-08L, 23111AG050LE)
9	1	LN9161-08M	NUT (ALT: ASN52320BH050N)



DETAIL A



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK OWNER
NO. 1472.S9.MLS
16-06-09

D5311-041 ENGINE COWL SWIVEL PROP ROD

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.91 lbs
- 8) WELD PER QSI 004
- 9) ENSURE ROD SWIVELS EASILY AFTER WELDING
- 10) REMOVE WELDING MARKS USING ELECTROPOLISHER
- 11) INSTALL APPROXIMATELY AS SHOWN

RELEASED
2016-04-18
EN 16-57

APPROVED

B	REVISED D5311-3 DIMENSIONS. ADDED D3622-15 BALL STUD, LN9161-08M NUT AND LN9016-08K WASHER. ADDED D5311-7 PROP ROD (SHEET 5).	AK	16.02.17
A	NEW ISSUE	AK	15.09.28
REV.	DESCRIPTION	BY	DATE
DESIGN	AK	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AK		
CHECKED	CC	DRAWING NO.	REV. B
MFG. APPR.	DD	D5311	SHEET 1 OF 5
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	ENGINE COWL SWIVEL PROP ROD NTS	
DATE	16.02.17	COPYRIGHT © 2016 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	